

What is claimed is:

1. A lens barrel comprising:

a front sub-lens group provided on the object side and  
a rear sub-lens group provided on the image side, said front  
5 and rear sub-lens groups functioning optically when in a  
mutually close position and in a mutually distant position  
with respect to the optical axes of said front and rear  
sub-lens groups;

10 a front sub-lens group frame for supporting said front  
sub-lens group and a rear sub-lens group frame for  
supporting said rear sub-lens group, said front and rear  
sub-lens group frames being held in engagement with each  
other while being able to move in the optical axis direction  
relative to each other;

15 a lens frame shift mechanism for causing said front  
sub-lens group frame and said rear sub-lens group frame to  
move relative to each other to obtain said mutually close  
position and said mutually distant position;

20 a first lens group positioning surface, provided on  
said front sub-lens group frame, for positioning said front  
sub-lens group in the optical axis direction by contacting  
a portion of a rear surface of said front sub-lens group upon  
said front sub-lens group being inserted from the front side

of said front sub-lens group frame; and

a second lens group positioning surface, provided on said rear sub-lens group frame, for positioning said rear sub-lens group in the optical axis direction by contacting 5 a portion of a front surface of said rear sub-lens group upon said rear sub-lens group being inserted from the rear side of said rear sub-lens group frame.

2. The lens barrel according to claim 1, wherein said front sub-lens group frame includes a front sealed

10 region in the front end portion thereof, said front sealed region preventing said front sub-lens group from coming out from the front side of said front sub-lens group frame; and

wherein said rear sub-lens group frame includes a rear sealed region in the rear end portion thereof, said rear 15 sealed region preventing said rear sub-lens group from coming out from the rear side of said front sub-lens group frame.

3. The lens barrel according to claim 1, further comprising:

20 a pair of follower engaging recesses which are formed on one of opposing surfaces of said front sub-lens group frame and said rear sub-lens group frame; and

a follower projection which are formed on the other

of said opposing surfaces of said front sub-lens group frame and said rear sub-lens group frame;

wherein said mutually close position of said front sub-lens group is defined via engagement of said follower 5 projection and one of said pair of follower engaging recesses, and said mutually distant position of said front sub-lens group is defined via engagement of said follower projection and the other of said pair of follower engaging recesses.

10 4. The lens barrel according to claim 1, wherein said front sub-lens group frame and said rear sub-lens group frame can be rotated relative to each other; and

wherein said lens frame shift mechanism includes a shift cam mechanism provided on opposing surfaces of said 15 front sub-lens group frame and said rear sub-lens group frame for moving said front and rear sub-lens group frames to said mutually distant position and to said mutually close position in accordance with the relative rotation of said front and rear sub-lens group frames.

20 5. The lens barrel according to claim 4, wherein said shift cam mechanism includes:

a shift cam surface provided on one of the opposing surfaces of said front sub-lens group frame and said rear

sub-lens group frame, said shift cam surface being inclined with respect to a circumferential direction thereof; and a follower projection provided on the other of said opposing surfaces of said front sub-lens group frame and 5 said rear sub-lens group frame for engaging with said shift cam surface.

6. The lens barrel according to claim 5, wherein a pair of follower engaging recesses are formed at opposite ends of each of said shift cam surfaces, wherein said 10 follower projection engages with one of said follower engaging recesses when said front and rear sub-lens group frames are in said mutually close position and in said mutually distant position.

7. The lens barrel according to claim 1, wherein 15 said front and rear sub-lens groups form one of a plurality of variable lens groups of a zoom lens system that are moved in the optical axis direction during zooming, said front and rear sub-lens groups serving as a focusing lens group when in said mutually close position and in said mutually distant 20 position; and

wherein said lens barrel includes a focusing mechanism for moving said front and rear sub-lens group frames in said mutually close position and in said mutually distant

position, in the optical axis direction, while maintaining a constant distance between said front and rear sub-lens group frames.